

IN THE CLAIMS:

1. (Previously Presented) A method of forming a semiconductor device feature, the method comprising:

providing a substrate, said substrate having a surface;

depositing a first layer above said surface of said substrate;

depositing a second layer of material on said first layer of material;

implanting ions into said second layer of material to modify a structure of the material of said second layer;

after depositing said first layer and said second layer of material, patterning said second layer of material and said first layer to form said semiconductor device feature in said first layer; and

removing said patterned second layer of material, whereby a selectivity in removing said patterned second layer is increased by the implanting of said ions.

2. (Original) The method of claim 1, wherein said ions are substantially inert ions.

3. (Original) The method of claim 1, wherein said ions are at least one of argon ions, xenon ions, germanium ions and silicon ions.

4. (Original) The method of claim 1, wherein the ion dose is in the range of approximately 1×10^{13} to 5×10^{15} ions/cm².

5. (Original) The method of claim 1, wherein the ion energy is in the range of approximately 5-80 keV.

6. (Previously Presented) The method of claim 1, wherein said second layer of material is an anti-reflective coating layer.

7. (Previously Presented) The method of claim 1, wherein said second layer of material is comprised of an inorganic material.

8. (Previously Presented) The method of claim 1, wherein the material of said second layer of material is one of silicon nitride and silicon reacted nitride.

9. (Original) The method of claim 1, wherein a dimension of the device feature in one direction is 100 nm or less.

10.-21. (Canceled)

22. (Currently Amended) A method, comprising:
providing a substrate, said substrate having a surface;
depositing a first layer of material comprised of a gate electrode material above said surface of said substrate;
depositing a second layer of material comprised of an anti-reflective coating material on said first layer of material; and

after depositing said first layer and said second layer of material, implanting ions into said second layer of material to modify a structure of the material of said second layer of material and thereby increase an etch selectivity of said second layer of material relative to said first layer of material; and
after implanting said ions, performing at least one etch process to define a gate electrode feature in said first layer of material.

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Previously Presented) The method of claim 22, wherein said ions comprise at least one of argon ions, xenon ions, germanium ions and silicon ions.

27. (Previously Presented) The method of claim 22, wherein said ions are substantially inert ions.

28. (Previously Presented) The method of claim 22, wherein an implant energy of an ion implant process performed to implant said ions is selected such that the structure of the material comprising the second layer of material is modified substantially throughout an entire thickness of said second layer of material.

29. (Previously Presented) The method of claim 22, wherein an implant energy of an ion implant process performed to implant said ions is selected such that said implanted ions are substantially located adjacent an interface between said first layer of material and said second layer of material.

30. (Canceled)

31. (Currently Amended) The method of ~~claim 30~~ claim 22, further comprising performing an etching process to remove a portion of said second layer of material above said gate electrode feature in said first layer of material.

32. (Currently Amended) A method, comprising:
providing a substrate, said substrate having a surface;
depositing a first layer of gate electrode material above said surface of said substrate;
depositing a second layer of material comprising an anti-reflective coating material on
said first layer of gate electrode material; and
after depositing said first layer and said second layer of material, performing an ion
implant process to implant ions into said second layer of material to modify a
structure of the material of said second layer of material and thereby increase an
etch selectivity of said second layer of material relative to said first layer of gate
electrode material, wherein an implant energy of said ion implant process is
selected such that the structure of the material comprising the second layer of

material is modified substantially throughout an entire thickness of said second layer of material; and
after implanting said ions, performing at least one etch process to define a gate electrode feature in said first layer of material.

33. (Previously Presented) The method of claim 32, wherein said ions comprise at least one of argon ions, xenon ions, germanium ions and silicon ions.

34. (Previously Presented) The method of claim 32, wherein said ions are substantially inert ions.

35. (Canceled)

36. (Currently Amended) The method of ~~claim 35~~ claim 32, further comprising performing an etching process to remove a portion of said second layer of material above said gate electrode feature in said first layer of material.

37. (Currently Amended) A method, comprising:
providing a substrate, said substrate having a surface;
depositing a first layer of gate electrode material above said surface of said substrate;
depositing a second layer of material comprising an anti-reflective coating material on
said first layer of gate electrode material; ~~and~~

after depositing said first layer and said second layer of material, performing an ion implant process to implant ions into said second layer of material to modify a structure of the material of said second layer of material and thereby increase an etch selectivity of said second layer of material relative to said first layer of gate electrode material, wherein an implant energy of an ion implant process performed to implant said ions is selected such that said implanted ions are substantially located adjacent an interface between said first layer of material and said second layer of material; and
after implanting said ions, performing at least one etch process to define a gate electrode feature in said first layer of material.

38. (Previously Presented) The method of claim 37, wherein said ions comprise at least one of argon ions, xenon ions, germanium ions and silicon ions.

39. (Previously Presented) The method of claim 37, wherein said ions are substantially inert ions.

40. (Canceled)

41. (Currently Amended) The method of ~~claim 40~~ claim 37, further comprising performing an etching process to remove a portion of said second layer of material above said gate electrode feature in said first layer of material.